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PerFormanCe POWER PFC500

Jameco Part Number 202913

The PFC500 products of the PerFormanCe Power series combine high performance midrange power with high power density (4.4 watts/in³), active Power Factor Correction (PFC) and high reliability to meet the requirements of commercial and industrial systems.

Providing tightly regulated DC power, the PFC500 delivers full output performance with only 300 Linear Feet per Minute (LFM) forced-air cooling (factory installed fan optional). Other features include remote sense, power fail, logic level inhibit, DC power good. Main channel current sharing is provided for redundant applications. The PFC500 is available with SAE mountings or optional metric mountings.

The PFC500 product line is approved to the latest international regulatory standards, and displays the CE Mark.

FEATURES

- Power Factor Correction (PFC) Meets EN61000-3-2
- Fully Regulated Outputs
- Remote Sense
- Current Share, Power Fail, and Power Good Signals
- Overtemperature, Overvoltage, and Overcurrent Protected
- Available with Metric or SAE Mountings
- Input Transient & ESD Compliance to EN61000-4-2/-3/-4/-5
- Fan Output Voltage and Optional Fan
- Optional Isolation Diodes for Parallel or Redundant Operation
- 48VDC Input Option (Consult Factory)

SINGLE OUTPUT MODEL SELECTION CHART

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	MAXIMUM OUTPUT CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION (NOTE 3)	RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
PFC500-1024	24V	21.6V to 26.4V	21A	0.5%	0.2%	1%	23.88V to 24.12V
PFC500-1028	28V	25.2V to 30.8V	17.9A	0.5%	0.2%	1%	27.86V to 28.14V
PFC500-1048	48V	46.0V to 56.0V	10.4A	0.5%	0.5%	1%	47.52V to 48.48V

NOTES: 1) Output currents ratings are expressed with 300 LFM forced air.
2) Maximum peak to peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
3) Remote sense connected.

INPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Input Voltage - AC	Continuous input range.		85		264	VAC
Input Frequency	AC Input.		47		63	Hz
Brown Out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.		85			VAC
Hold-Up Time	Over full AC input voltage range at full rated load.		20			ms
Input Current	85 VAC at full rated load.				7.8	ARMS
Input Protection	Non-user serviceable internally located AC input line fuse, F10A, 250V.					
Inrush Surge Current	Internally limited by thermistor, one cycle, 25°C.	110 VAC 220 VAC			35 65	APK
Power Factor	Per EN61000-3-2.		0.98			W/VA
Operating Frequency	Switching frequency of main transformer.			100		kHz

Rev. 04/02

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OUTPUT SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Efficiency	Full rated load, 110 VAC. Varies with distribution of loads among outputs.		75			%
Minimum loads		PFC500-1024	0.6			
		PFC500-1028	0.6			Amps
		PFC500-1048	1.2			
Ripple and Noise	Full load, 20 MHz bandwidth.		See Model Selection Charts			
Output Power	300 LFM forced-air cooling required for operation. See optional fan. Continuous power, multiple output models.			500		Watts
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on.				0	V
Regulation	Without connection of remote sense.	PFC500-1024			0.8	
		PFC500-1028			0.7	%
		PFC500-1048			1.0	
Transient Response	Recovery time, to within 1% of initial set point due to a 50-100% load change, 3% max. deviation. (Main output of multi-output units).			1		ms
Turn-on Delay	Time required for initial output voltage stabilization.				1	Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.			10		ms

INTERFACE SIGNALS AND INTERNAL PROTECTION

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection		PFC500-1024	27.0		30.7	
		PFC500-1028	32.0		35.0	V
		PFC500-1048	60.0		70.0	
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.					
Overtemperature Protection	System shutdown due to excessive internal temperature, automatic reset.					
Remote Sense	Total voltage compensation for cable losses with respect to the main output.				250	mV
Current Share	Accuracy of shared current with up to 6 parallel units.				10	%
Inhibit	TTL compatible logic signal will inhibit outputs by the application of a logic low signal. An open circuit or external TTL high signal allows normal operation.					
Input Power Fail Warning	TTL compatible logic signal. Time before regulation dropout due to loss of input power at 110 VAC.		4			ms
Power Good	TTL compatible signal. Signal is low if main output is greater or less than 10% of nominal. Pull-up resistor is 1 kΩ with a +5V source for units without the "D" option. See Apps Note #P1 for details.	PFC500-1024	22.08		27.36	
		PFC500-1028	25.20		30.80	V
		PFC500-1048	44.20		54.72	
Fan Voltage	Provides 170mA current to user supplied fan if fan option is not selected.			12		V

SAFETY, REGULATORY, AND EMI SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. CSA 22.2 NO. 234/950. EN60950 (TÜV).			Approved		
Dielectric Withstand Voltage	Input to output.		2600			VDC
Electromagnetic Interference	FCC CFR title 47 Part 15 Sub-Part B - Conducted.		B			Class
	EN55022 / CISPR 22 Conducted.		B			
ESD Susceptibility	Per EN61000-4-2, level 4.		8			kV
Radiated Susceptibility	Per EN61000-4-3, level 3.		10			V/M
EFT/Burst	Per EN61000-4-4, level 4.		±4			kV
Input Transient Protection	Per EN61000-4-5 class 3.	Line-to-Line	1			kV
		Line-to-Ground	2			
Insulation Resistance	Input-to-output.			10		MΩ
Leakage Current	Per EN60950, 264 VAC.				2.0	mA

ENVIRONMENTAL SPECIFICATIONS

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Altitude	Operating.				10k	ASL Ft.
	Non-Operating.				40k	ASL Ft.
Operating Temperature		At 100% load	0		50	°C
	Derate linearly above 50°C by 2.5% per °C.	At 50% load	0		70	°C
Storage Temperature			-55		85	°C
Forced Air Cooling	Forced-air cooling of 300 LFM is required if the internal fan is not specified. Cooling air velocity is measured 1/4" above, at the middle of the chassis. Airflow direction is from the input section to the output section.					
Temperature Coefficient	0°C to 70°C (after 15 minute warm-up).			±0.02	±0.05	%/°C
Relative Humidity	Non-Condensing.		5		95	%RH
Shock	Operating: 10 ±3 ms, 3 axis, Half Sine.				20	G
	Non-operating: 10 ±3 ms, 3 axis, Half Sine.				40	
Vibration	Operating: 5-32 Hz				0.02	in (DA)
	32-2000 Hz Sinusoidal				1	GPK
	Non-operating:				6.15	GRMS

OPTIONS

DESCRIPTION	NOTES	SIZE IMPACT
Isolation Diodes	Add “D” as a suffix to the model number to order factory-installed isolation diodes for parallel or redundant operation. External capacitors are required to meet ripple/noise specs. Please see Apps Note #P1. In addition, Power Good has a pull-up resistor of 475Ω with a +5V source on certain models with the “D” option.	N/A
Fan	Add “F” as a suffix to the model number to order integral fan; (provides required 300 LFM of forced-air cooling) otherwise provided by end user.	10.50" x 5.00" x 2.50" (266.7mm x 127.0mm x 63.5mm)
Metric Mounting	Add “M” as a suffix to the model number to order chassis with M4 x 0.7 mounting inserts.	N/A

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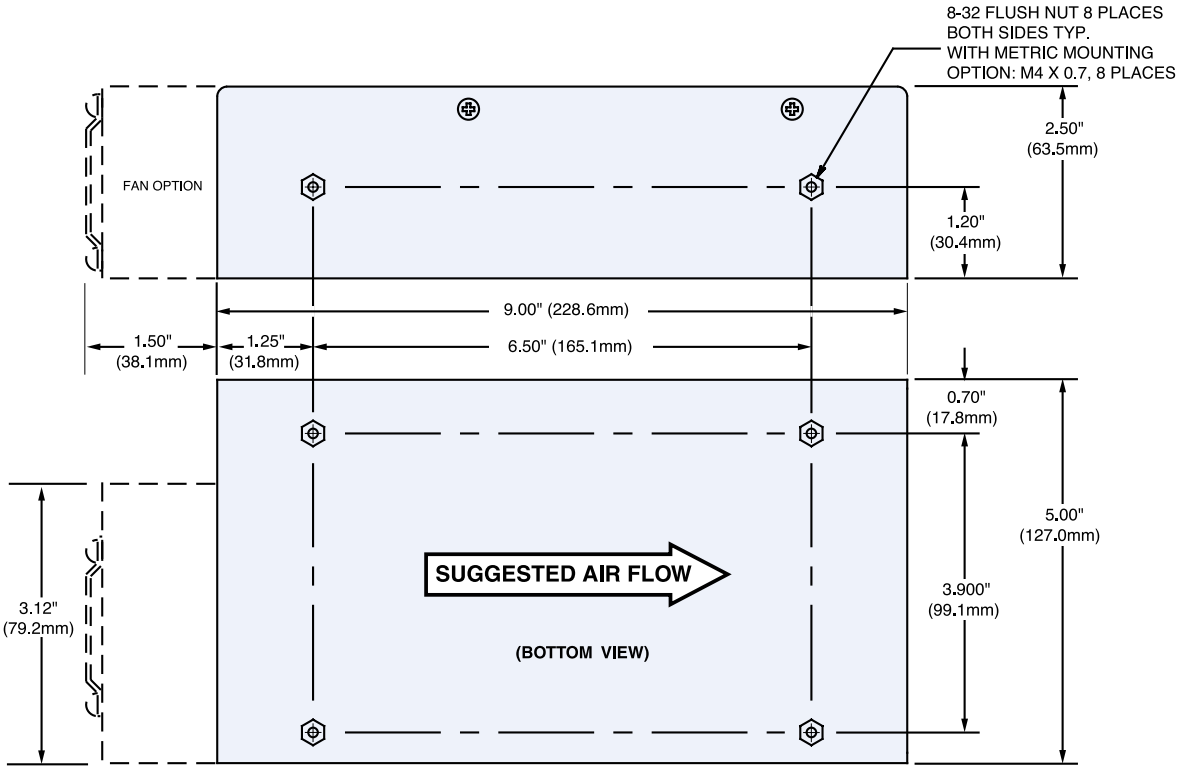
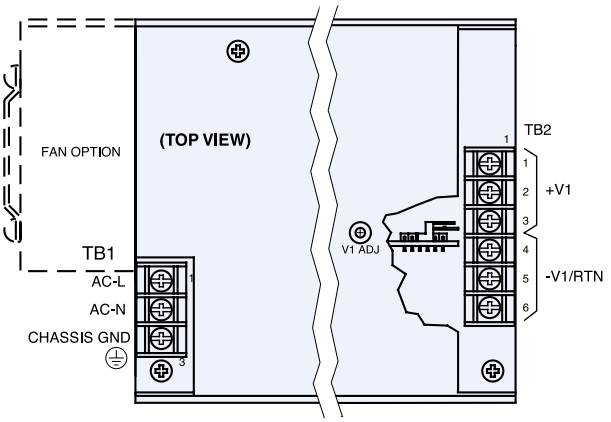
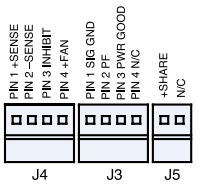
OVERALL SIZE: 9.00" x 5.00" x 2.50" (228.6mm x 127.0mm x 63.5mm)
OVERALL LENGTH WITH FAN: 10.50" (266.7mm)
WEIGHT: 4.3 LBS (1.95 kg)







J4, J3, J5
Molex Series 5048, 0.46mm
Square pins on 2.50mm centers.
Customer connection:

P4,P3,P5 Mating Housing:
Molex 5051, 5102, or Equiv.

P4,P3,P5 Mating Terminals:
Molex 4809 or 40445, or Equiv.

INPUT & OUTPUT CONNECTIONS: 6-32 SCREW TERMINAL ON 0.375" (9.5mm) CENTERS

CHASSIS: 0.090" (2.3mm) ALUMINUM ALLOY, WITH CLEAR FINISH